



# *Fourth State of Good Repair Roundtable* Asset Management System Implementation and Integration

## **“MARTA’s AMP Evolution”**

Presented by

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**Senior Director of Engineering & Development**

Developed by

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Asset Management/SGR Project Manager  
&  
Peter Bruno  
Asset Management/SGR Business Analyst

# *Topics*

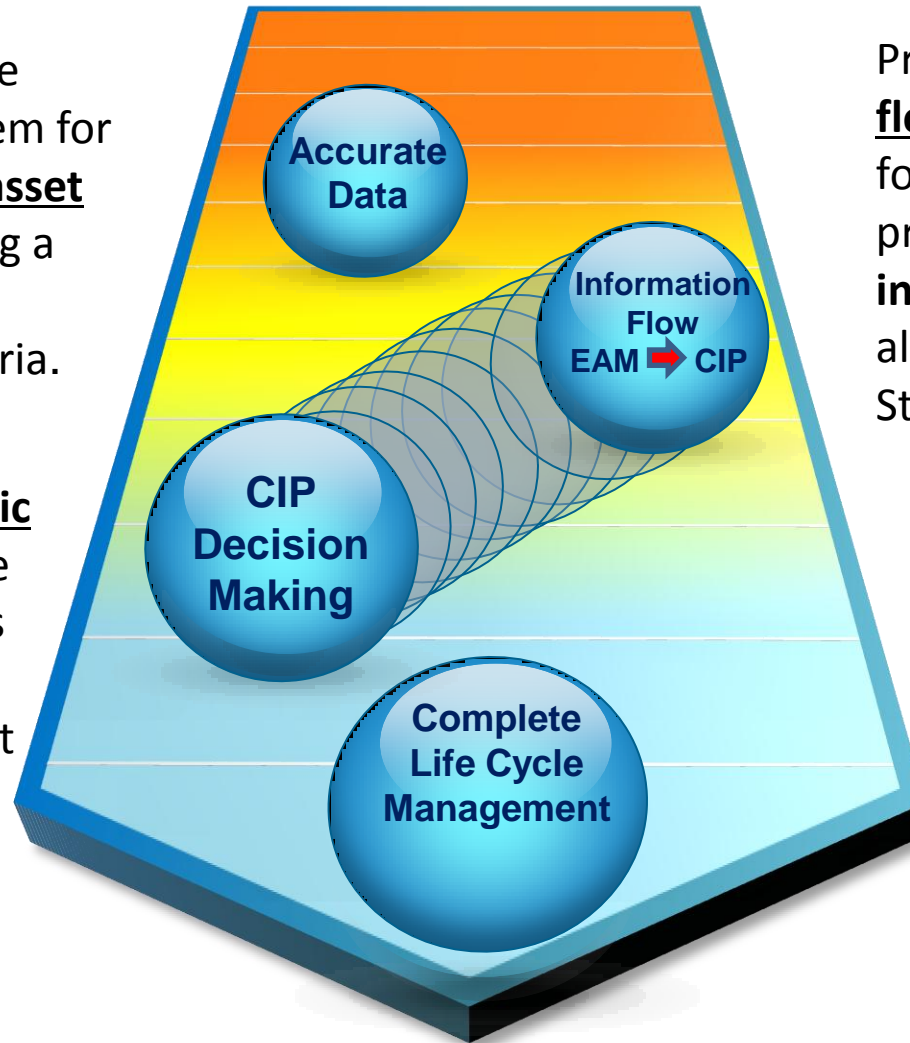
- **Vision & Evolution**
- **Organizational Structure**
- **AMP System Model: Components**
- **Lessons Learned / Takeaways**
- **Benefits**



# AMP Vision

Implement a single MARTA-wide system for **condition-based asset** replacement, using a consistent set of prioritization criteria.

Establish a **systematic program** to prioritize and identify projects in the long-range Capital Improvement Plan.

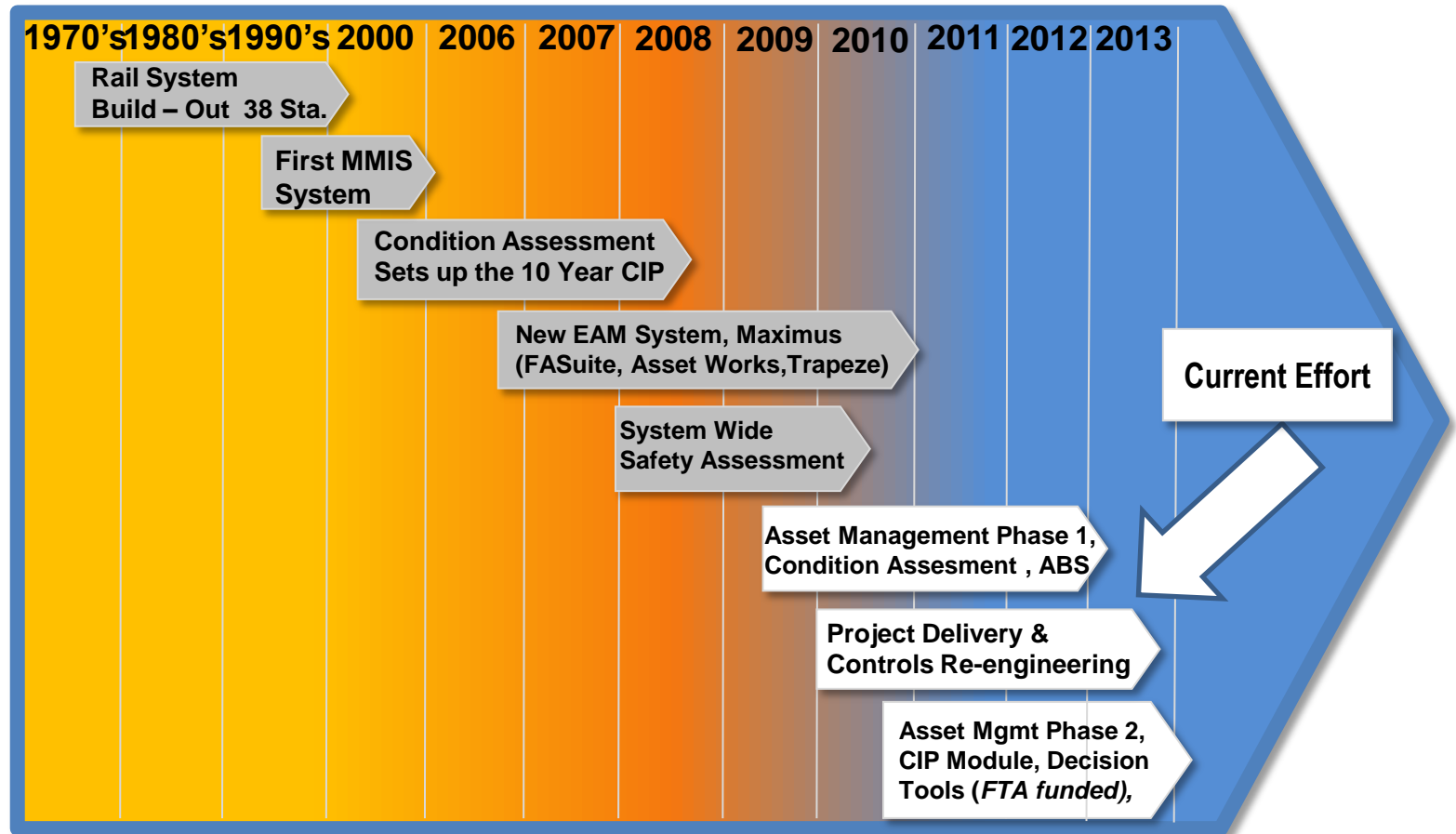


Provide a **continual flow of information** for establishing the priority of **capital initiatives** properly aligned with MARTA's Strategic Priorities.

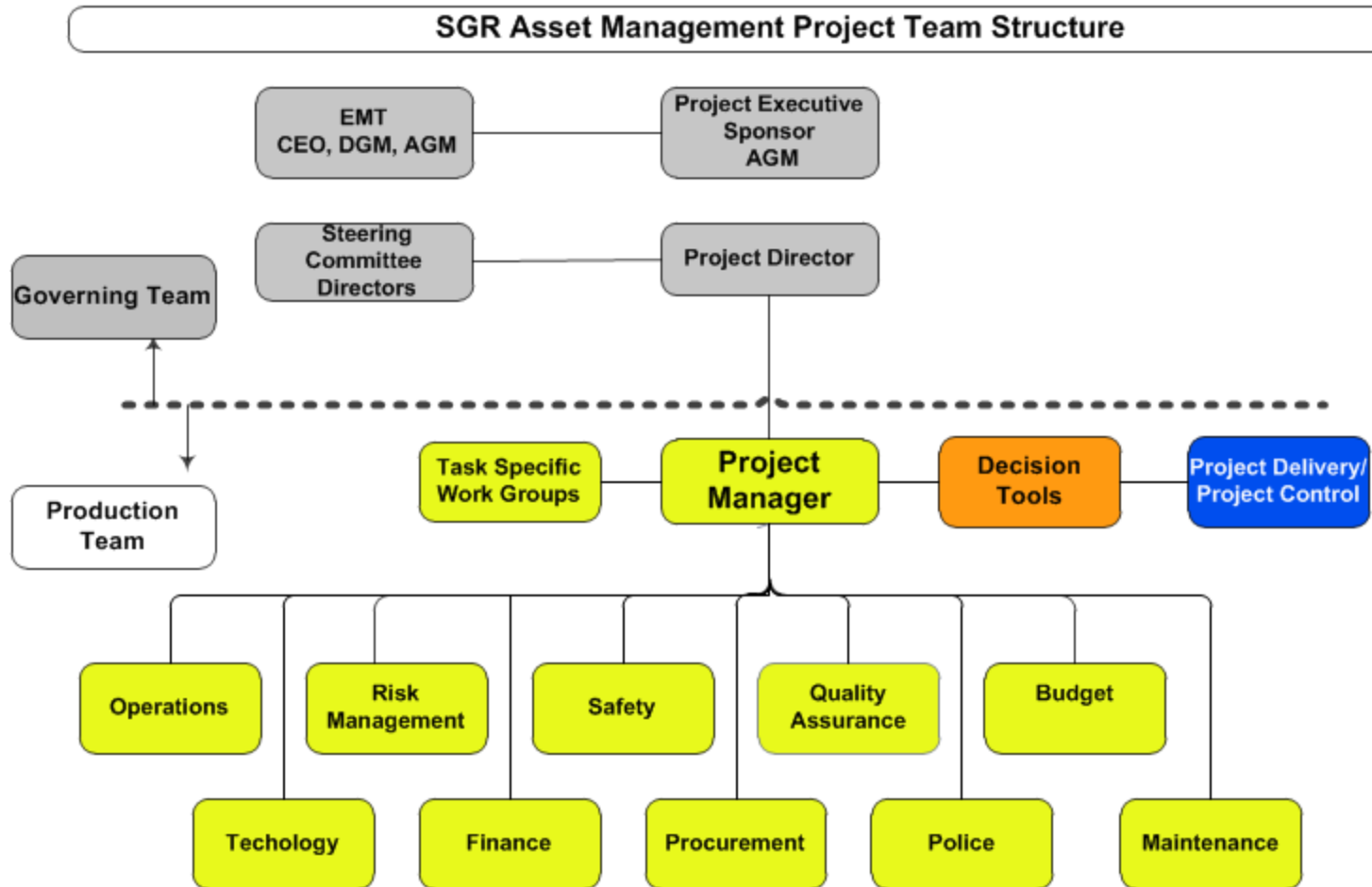
**Deliver projects** using the most cost effective delivery method.

**Deliverables** that assist the Authority to in managing their investment over its **complete life cycle**.

# AMP Timeline



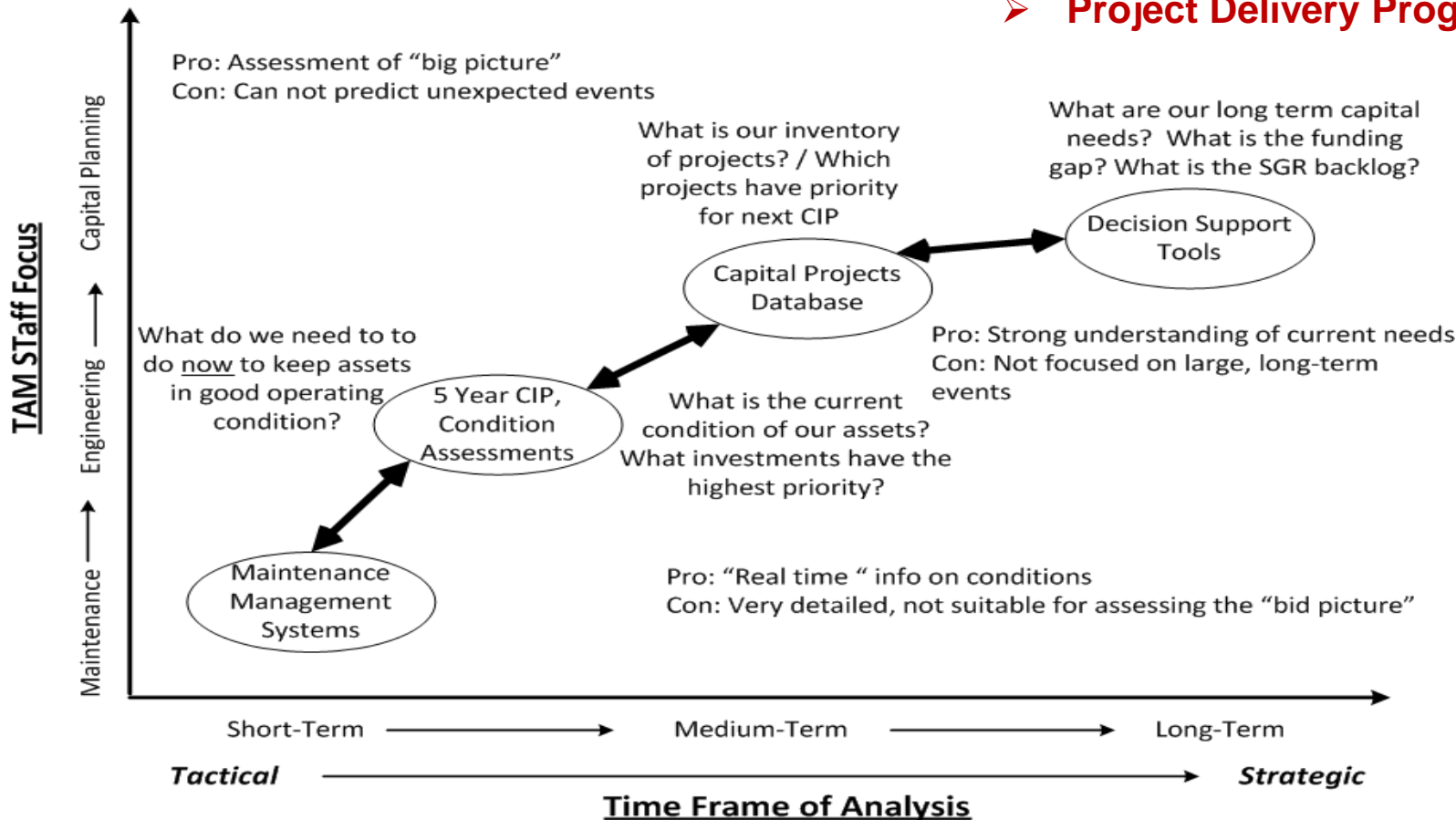
# MARTA's AMP Organization



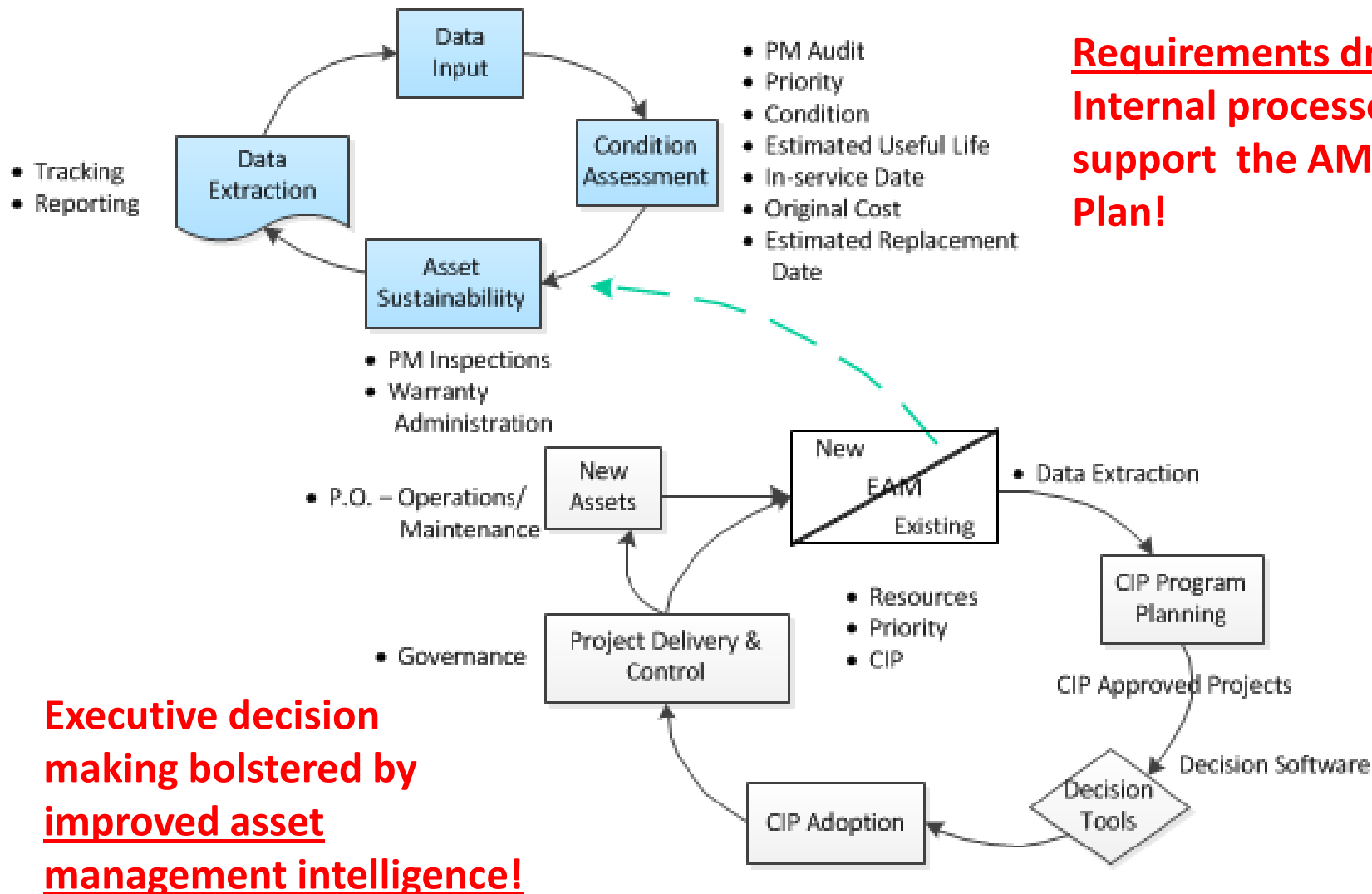
# Transit State of Good Repair Continuum

*This continuum helps agencies assess the state of ...*

- **Asset Data**
- **Asset Mgmt System**
- **Capital Program**
- **Decision Tools**
- **Project Delivery Program**

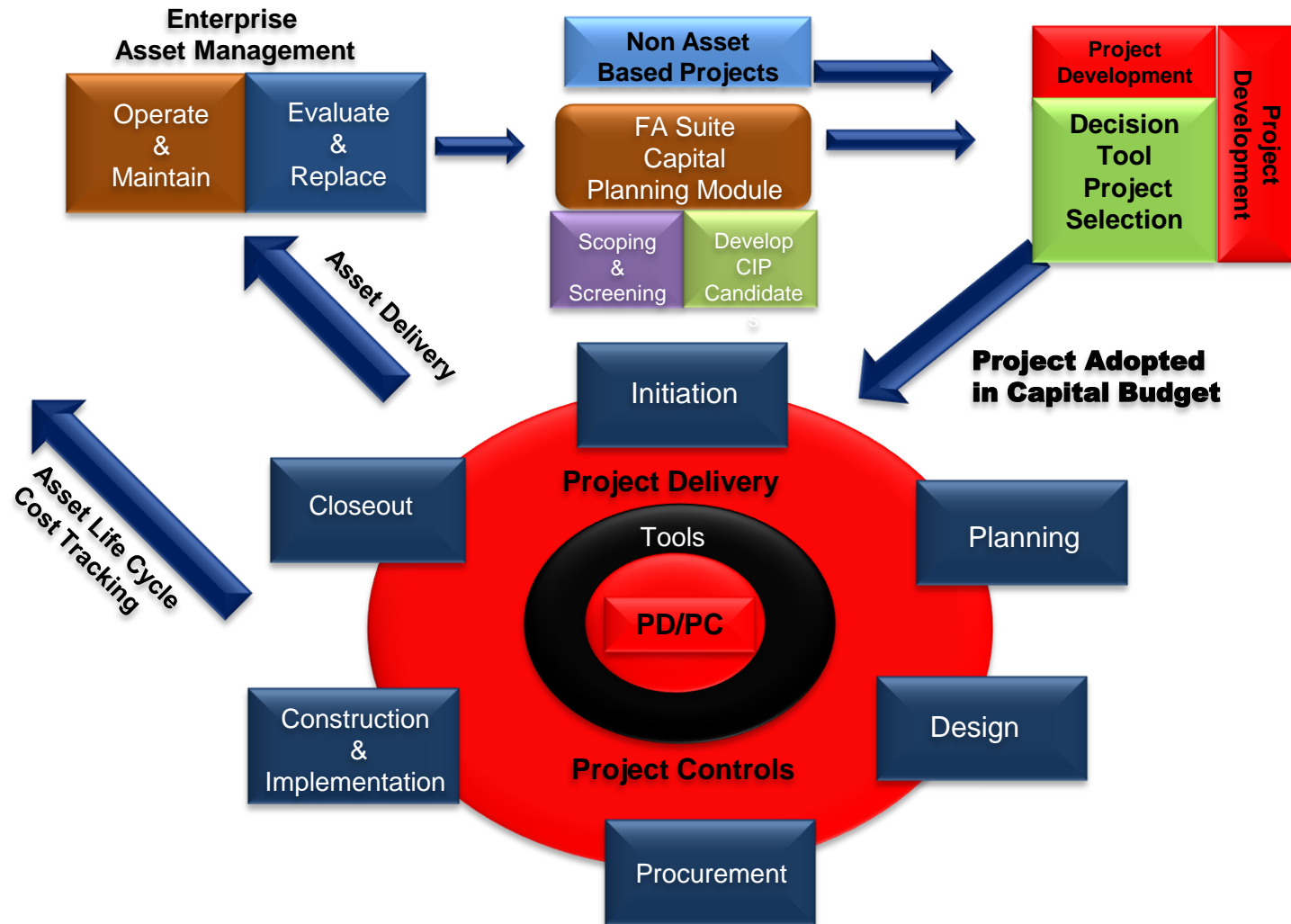


# MARTA's Systems Approach to AMP



**Requirements driven:**  
**Internal processes**  
**support the AMP**  
**Plan!**

# MARTA's Fully Integrated AMP System Model





# Enterprise Asset Management - Asset Database

## Priority Codes:

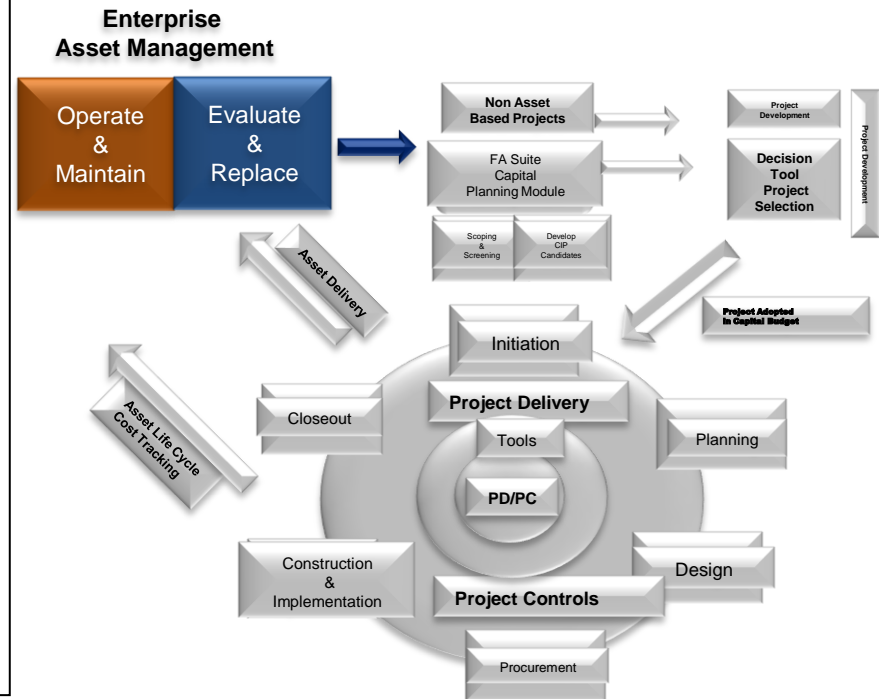
1. Life Safety Critical
2. Operation Critical
3. Operation Support
4. Operation Enhance
5. Operation Expansion
6. Failed
7. Decommissioned

### Condition Codes:

5. Excellent
4. Good
3. Adequate
2. Marginal
1. Poor

### Minimum Req'mts:

1. Equipment ID
2. Description
3. Asset Category
4. Equipment Type
5. EUL
6. Location
7. Life Cycle Status
8. Condition ID
9. Date in Service
10. Original Cost
11. Planned Retirement



- **Daily management of asset data (PM, PdM & I)**
- **Trusted, readily accessible data**
- **Triggers procurement decisions**
- **Cornerstone of our Capital Improvement Plan**



7/10/2012 4:20:17PM

## Capital Improvement Summary

(This report pulls Life Cycle Code 1 to 5. Lvl's columns note only relationship between equipment)

### Parameters

Asset Category:COM

Equipment Type(s):[ALL]

Location(s):[ALL]

Equipment(s):[ALL] to [ALL]

Life Cycle Status(s):1,2,3,4,5

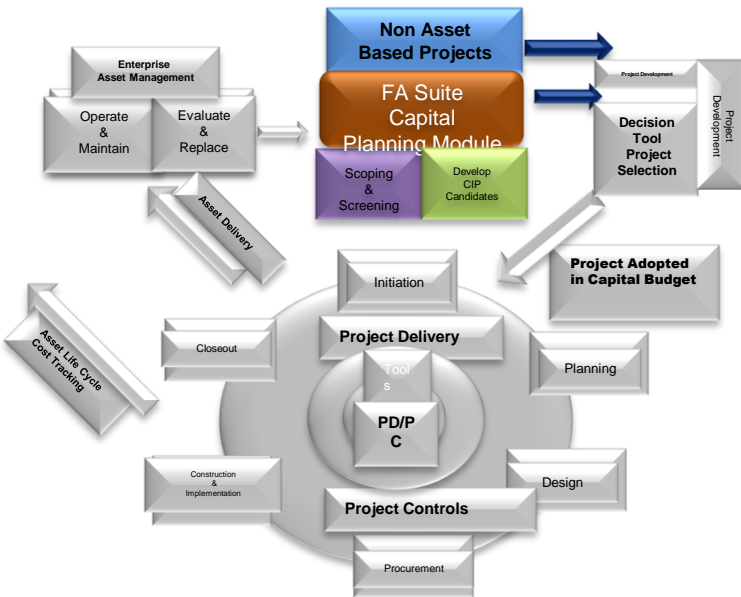
Condition Code (s): 1,2,3,4,5

EUL Code(s):[ALL]

Original Cost Range: 0.00 to 1,036,000.00

Equipment ID	Description	Asset Category	Asset Type	Equipment Type	Eul	Station Location	Stored Location	Life Cycle Status	Condition ID	Date In Service	Original \$Cost	Planned Retirement Date
<b>ALARM</b>												
RCC-FW-FAC	RSCC FIRE WARNING SYST.	COM	STATIONARY	ALARM	4	COM186	CC	2	3	07/01/1979	20,153	07/01/1983
EYT-INT-TWR	EYT-EAST YARD TOWER INTRUSION ALA	COM	STATIONARY	ALARM	10	COM186	EY	2	3	09/10/2005	7,623	09/10/2015
SPT-INT-RFARE	FP- FIVE POINTS REDUCED FARE INT ALA	COM	STATIONARY	ALARM	10	COM186	SPT	2	5	06/30/2008	4,044	06/30/2018
PTC-INT-GAR	PARA TRANSIT GARAGE INTRUSION ALA	COM	STATIONARY	ALARM	10	COM186	BR	2	3	04/01/1996	5,098	04/01/2006
SPT-INT-REST	FP- FIVE POINTS STATION RESTROOM IN	COM	STATIONARY	ALARM	10	COM186	SPT	2	3	05/26/1973	5,030	05/26/1983
SPT-INT-CUST	FP- FIVE POINTS CUSTOMER SERVICE RC	COM	STATIONARY	ALARM	10	COM186	SPT	2	5	06/30/2008	4,044	06/30/2018
SPT-INT-MRBL	FP- FIVE POINTS MARBLE ROOM INTRUS	COM	STATIONARY	ALARM	10	COM186	SPT	2	5	06/30/2008	4,044	06/30/2018

# Capital Decision Making Requirements



- Integrated asset management module: ties **FASuite asset data with non-asset based projects**
- Compile assets in **meaningful projects** for replacement
- Ensures agency is aware of assets **ready for replacement - project identification**


## CIP Evaluation Categories:

1. Program Priority (Safety, Reg. Ops Crit.)
2. Asset Condition
3. Strategic Agency Alignment
4. Funding Availability
5. Funding Source
6. Operating Budget Impact
7. Business Case/ROI
8. Estimated Payback Period
9. Sustainability/Environmental
10. Regional Impact
11. Partnership Opportunities
12. Speed of Delivery
13. Deliverability (complexity/likelihood)
14. Risk Management


Address <http://meamap13/Dev/Reporting/ReportViewer.aspx?ReportName=Equipment+Info%5cMR+Capital+Improvement+Plan.rpt> Go Links »

Show Filter To PDF Schedule Capital Improvement Plan Add to Favorite

1 of 1 100% powered by crystal



**FASuite Information Center**  
Keeping Your Business in Focus...



## Capital Improvement Plan

Asset Category: BUS, RAIL  
Life Cycle Status: [ALL]  
EUL Code: [ALL]  
Life Total Meter: 0 to 99,999,999

Asset Category	Life Cycle Status
BUS	1- LIFE SAFETY-CRITICAL
RAIL	1- LIFE SAFETY-CRITICAL
RAIL	1- LIFE SAFETY-CRITICAL
Grand Total==>	

Address <http://meamap13/Dev/Reporting/ReportViewer.aspx?ReportName=Equipment+Info%5cMR+Capital+Improvement+Plan.rpt> Go Links »

Show Report Schedule

### Enter Life Cycle Status:

8 items found

SEARCH BY  
Item Desc

Search Reset

Item	Desc
[ALL]	
1	LIFE SAFETY-CRITICAL
2	OPERATION CRITICAL
3	OPERATION SUPPORT
4	OPERATION ENHANCEMENT
5	OPERATION EXPANSION
6	DECOMMISSIONED
7	SALVAGE

Add all 8 items Remove Remove All Apply

Enter Asset Category:  
bus Add Remove Remove All

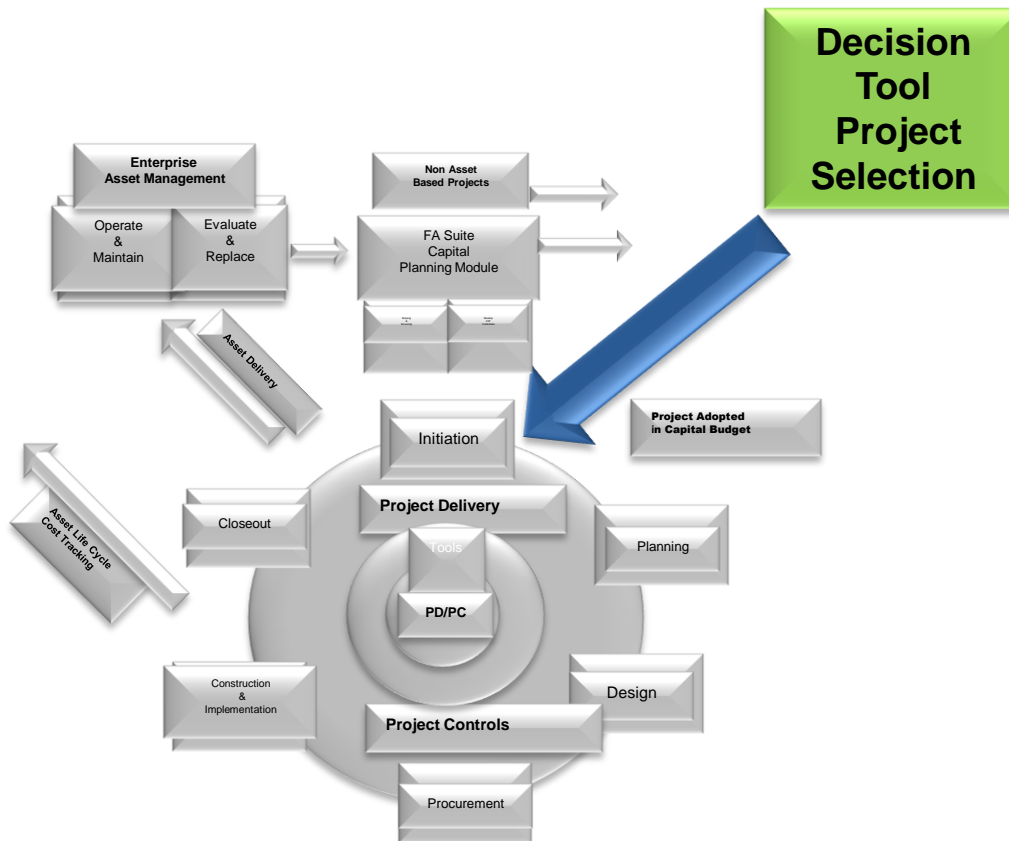
Enter Life Cycle Status:  
Add Remove Remove All

Enter EUL Code:  
[ALL] Add Remove Remove All

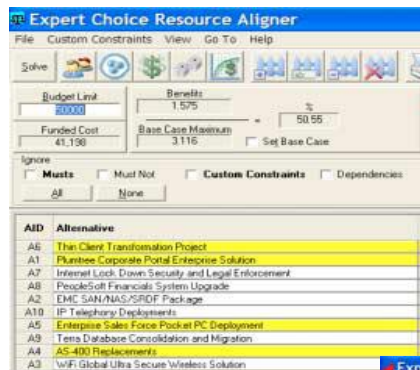
Enter Start Life Meter:  
0

Enter End Meter Life:  
99999999

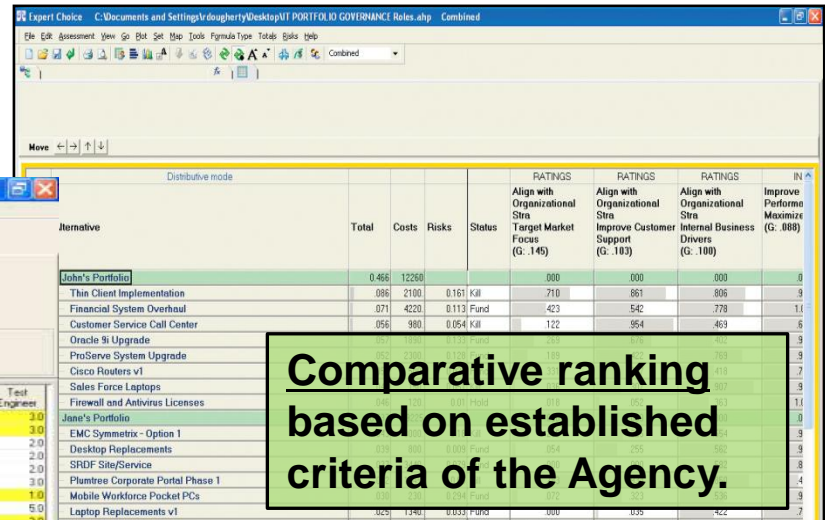
# Project Decision Making



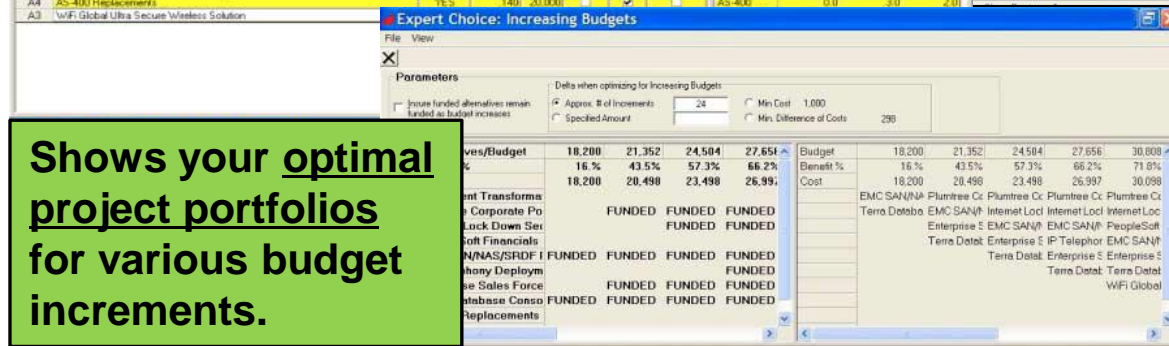
- Integrated project decision making: utilizes asset database and capital module output
- Groups candidate projects by agency-driven criteria
- Executive level “what-if” scenarios for portfolio optimization
- Presents financially constrained capital improvement plans ensuring informed decision making



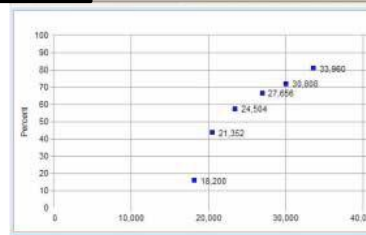
**Budget constraints  
Actual funding**



**Comparative ranking  
based on established  
criteria of the Agency.**



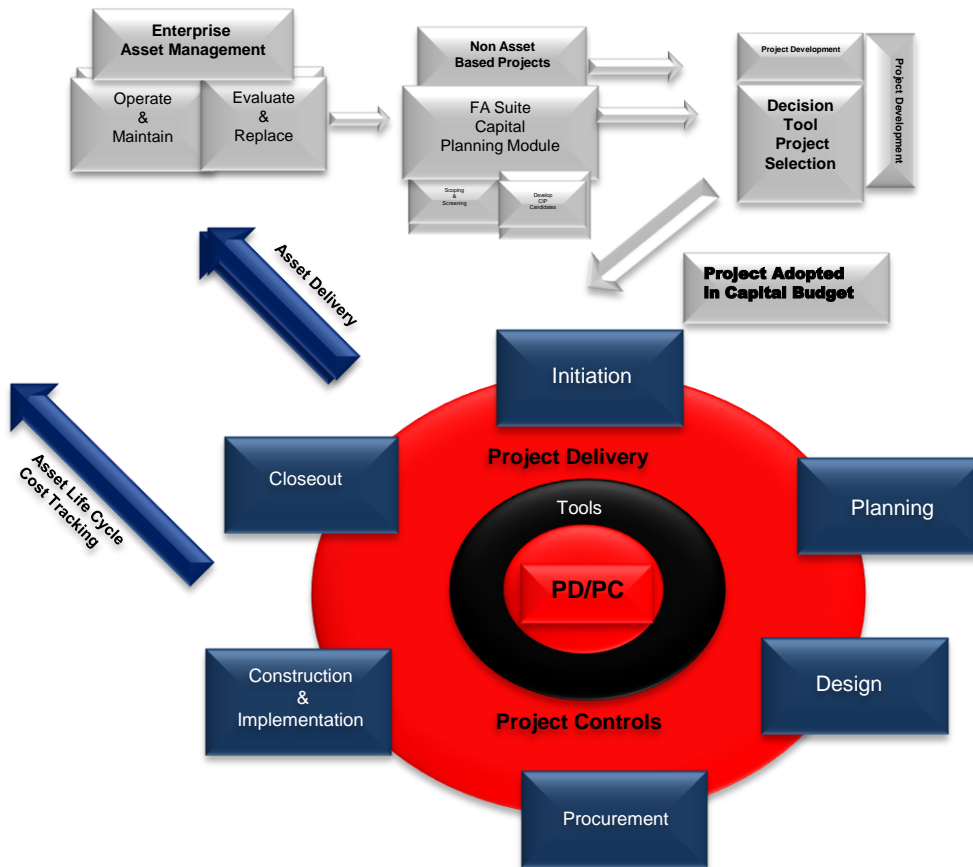
**Shows your optimal  
project portfolios  
for various budget  
increments.**



**Improving competitiveness of projects  
Selecting the optimal project mix to maximize  
the collective benefit, while balancing other  
factors such as risk, budget or staffing  
constraints and political considerations.**



# Project Delivery & Control



- Capital projects delivery group equipped with proper **capacity/skills**
- Standardize capital project management **business processes** and **tools**
- Bolster project controls office to better monitor and report **project performance**.



# Project Origination Document

## Project Origination Checklist

Project Initiative			
Is this initiative a new Concept?	Yes	<input type="checkbox"/>	No <input type="checkbox"/>
• If yes, has this concept been proven through the implementation at other Authorities?	Yes	<input type="checkbox"/>	No <input type="checkbox"/>
• If no, is this project request based on a mandate or Authority Management directive?	Yes	<input type="checkbox"/>	No <input type="checkbox"/>
Is this an Urgent Request?	Yes	<input type="checkbox"/>	No <input type="checkbox"/>
Have you begun implementation of this initiative?	Yes	<input type="checkbox"/>	No <input type="checkbox"/>
Does the initiative require physical changes to MARTA assets?	Yes	<input type="checkbox"/>	No <input type="checkbox"/>
If the initiative became a project would you consider implementation of the work scope to be of high risk due to project complexity?	Yes	<input type="checkbox"/>	No <input type="checkbox"/>
Will the initiative support the current MARTA Strategic Plan and Priorities?	Yes	<input type="checkbox"/>	No <input type="checkbox"/>



General Project Information			
Project Name			
AGM			
MARTA Department			
Project Owner/Sponsor			
Project Initiator			
Email Address			
Phone Number			
MARTA Department			
Expected Start Date			
Expected Completion Date			
Estimated Total Project Cost (In K's)	\$0		
Expected Savings	\$0		
<p><b>IMPORTANT REMINDER</b></p> <p>Please make sure you review requirements with your project team, MARTA Contracts and Procurement and other MARTA departments, before finalizing this template. Much of the information required will need to come from a discussion with these MARTA team members.</p>			
Identify Priority, Funding Source and Impact			
Program Urgency & Priority	Assets Condition	Funding Source	Operating Impact
Urgent Request? <input type="checkbox"/> Yes* <input type="checkbox"/> No * Explain in Problem Description	<input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Adequate <input type="checkbox"/> Substandard <input type="checkbox"/> Poor <input type="checkbox"/> Failed	<input type="checkbox"/> Transfer funding from existing CIP Project CIP Project Number: <input type="checkbox"/> New Federal Grant <input type="checkbox"/> New Funding Request <input type="checkbox"/> Partial Federal <input type="checkbox"/> Potential Federal <input type="checkbox"/> 100% Local <input type="checkbox"/> 100% Federal	<input type="checkbox"/> Cost Savings > 50% <input type="checkbox"/> Cost Savings < 50% <input type="checkbox"/> Neutral <input type="checkbox"/> Cost Increase < 10% <input type="checkbox"/> Cost Increase > 10%

- ❖ Project scope
- ❖ Funding sources
- ❖ Partnering opportunities
- ❖ Required disciplines
- ❖ Resources required
- ❖ Procurement strategy
- ❖ Service impacts
- ❖ Customer impact
- ❖ Regional impact

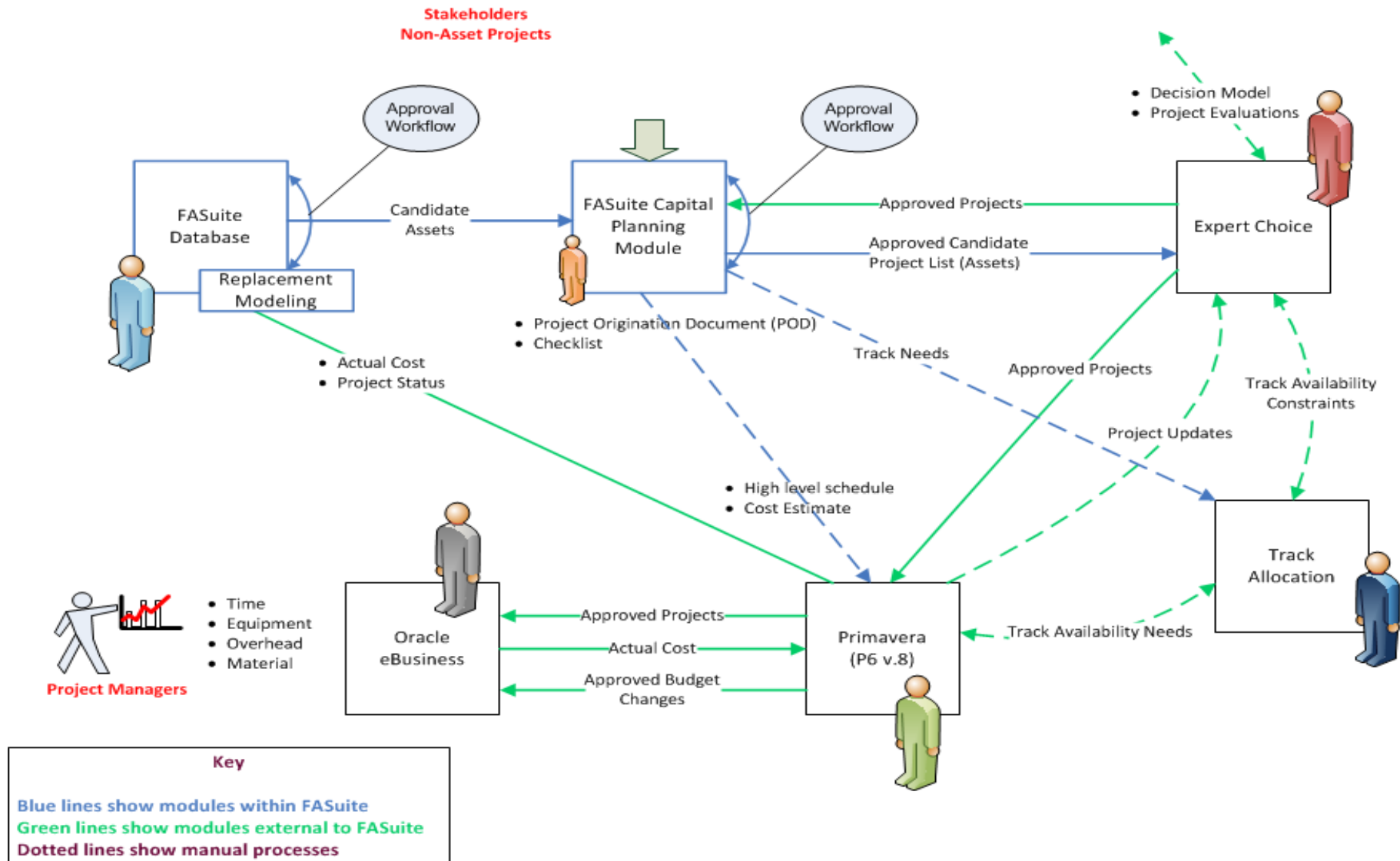


Activity Name	Start	Finish	Budgeted Cost	FY2012	FY2013	FY2014
Template A Project File	28-Nov-11	14-Apr-14	\$3,512,250	\$1,309,200	\$1,344,639	\$658,411
Template A.1.020 Planning Phase	28-Nov-11	12-Mar-12	\$216,080	\$216,080	\$0	\$0
Template A.2 Procurement for Final Design & Construction	28-Nov-11	4-Dec-12	\$1,620,170	\$1,083,120	\$527,050	\$0
Template A.1.040 Design-Build Phase	3-Dec-12	13-Jan-14	\$1,573,600	\$0	\$817,588	\$756,012
Template A.1.105 Commissioning & Close-Out Phase	13-Jan-14	14-Apr-14	\$102,400	\$0	\$0	\$102,400

## Planning Level Full Project Lifecycle Cost Estimate



# AMP System Model Data Flow





1. Most Agencies **can't afford** to not have an effective fully integrated Asset Management Policy and Plan. It makes good business sense!
2. This effort may start as a project but it will become **your business process**...so select the right technology that will ensure a successful agency integration.
3. Understanding the integration plan: **buy-in, planning and execution**.
4. Know your assets: **Asset Break Down Structure** (ABS) is critical. Key to proper integration.
5. What level of **granularity** is recommended vs. required by the various stakeholders and end users?
6. Do I have the right **people, processes** and **procedures** to fully carry out my AMP integration?
7. **Culture Change (Authority:** maintenance, operations, engineering, materials, procurement, accounting, finance.... **Contractors & Vendors** have a learning curve just like you!)
8. Procedures must be comprehensive to **expose gaps** during system implementation even after extensive “to-be” work sessions. ***Try to break or beat the system!***
9. **All related disciplines (even the non-traditional ones)** must participate in policy and procedure development with their needs fully communicated and understood.
10. Remember: **IT TAKES FIVE (5) YEARS TO BECOME AN OVERNIGHT SUCCESS!**

# MARTA's State of Good Rep Management Program

**Of Special Note**  
MARTA, has since the 1990's, been focused on a comprehensive SGR program.


MARTA's assets provide the backbone for safe, reliable, regional transit.

**Sustaining Assets at MARTA**  
Since the early 1970's MARTA has undertaken the construction and expansion of the transit system through the sound management of assets. Over \$800M was invested in the rail and bus systems.

**MARTA TRANSIT ASSET MANAGEMENT PLAN**

## Renewing, Rebuilding, Reinvesting

### MARTA's Asset Management Program: Serving our Customers, Sustaining our Assets, Securing the Future



**marta** POLICY ISS 09

### Asset Management Plan Policy

APPROVED BY:	OPERATIONS
DAVID M. SPRINGSTEAD Senior Director of E	
APPROVED BY:	
BEVERLY A. SCOTT Vice President	

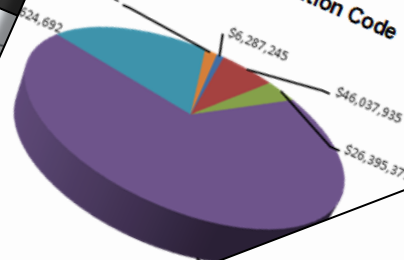
the professional body for whole life management of ph

## BSI PAS 55

**Summary Report**

No	Clause	Score	Evidence
4.1	General requirements	3.0	MARTA's electronic asset management system (Planimeter, now AssetWorx) was implemented in 2006 and has been up and running since the year. MARTA currently combines with AssetWorx through the system through the development of new capital planning module to track and report assets of and for it. This is the only partnership of its kind where a transit agency is co-developing the next generation of asset management software and where the capital planning module of a transit agency are working designed to interface with the asset database. See above.

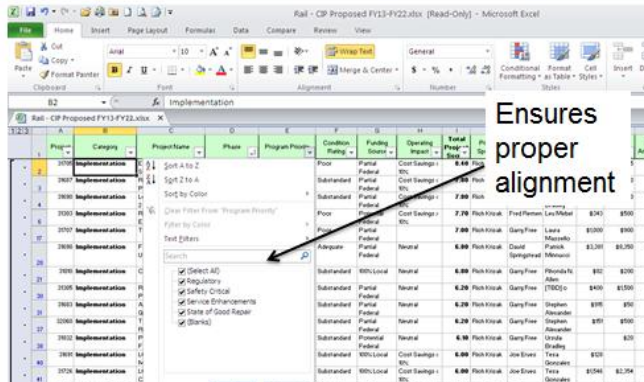
**Total Dollars by Condition Code**



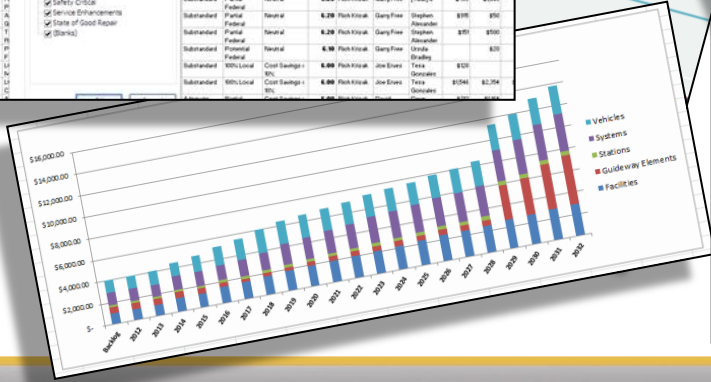
## Asset Inventory Model

### Fall 2011 Instruction Manual



Ensures proper alignment



**NTD**  
National Transit Database  
Federal Transit Administration

## MARTA ASSET MANAGEMENT PROGRAM CONDITION ASSESSMENT

Prepared by the  
Office of the Senior Director of Engineering & Development  
Metropolitan Atlanta Rapid Transit Authority

April 2012

**marta** Renewing, Rebuilding, Reinvesting

# Results: Balanced Scorecard Rail OTP

30-JUN-2012

FY2012 0

## KPIs

☒ Rail System Generated OTP

## Calculations

☐ Variation

## Period

Calendar: MARTA Fiscal Calendar

☒ Year

☐ Quarter

☐ Month

☐ Week

## Compare To

☒ Target

☐ Prior Year

[List of Scorecards](#) > [MARTA Strategy Map](#) > Rail System Generated OTP

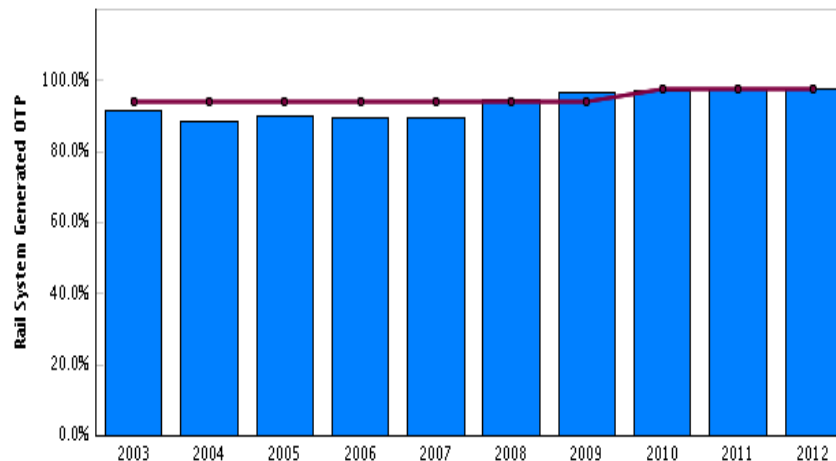
## Rail System Generated OTP

Rail System Generated OTP For Fiscal Year

Data last updated: 08-JUL-2012

View by Rail Line

## Rail System Generated OTP - 2012



Last Update Period: 2012

Rail System Generated OTP - Actual: 97.79% Target: 97.50% Variation: 0.29%

## Table

▼ Hide Table

Rail System Generated OTP		
Year	Actual	Target

- MARTA's Offices of Maintenance of Way (MOW) and Rail Car Maintenance (RCM) track system assets through the EAM System.
- MARTA, a 33 year old system, is routinely achieving **98% Rail On-Time** Performance.
- This high level of performance is attributed to many things, but at its base is a well maintained rail fleet, wayside systems and infrastructure.

[Return to Top](#)

# Wouldn't it be nice...

**...one (1) asset file\* accessible to all business units.**

## **Reduced data redundancy**

*(multiple data systems, processes and exercises in data mining)*

## **Reduced # of software systems**

*(maintenance and license fees, lack of consistency amongst users)*

## **Reduced operating and capital costs**

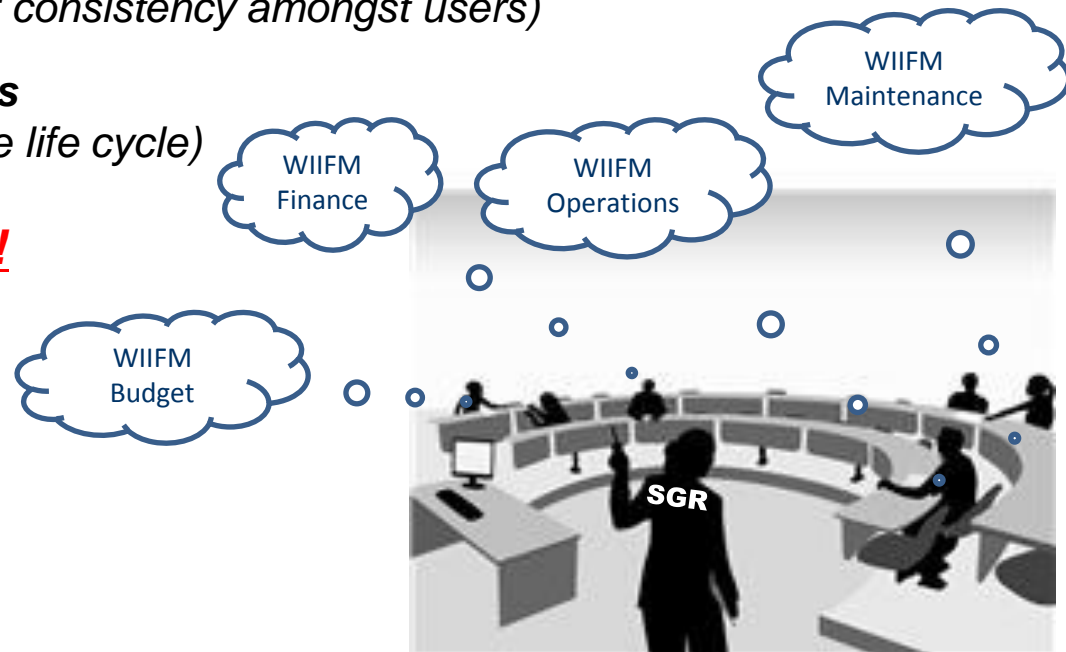
*(cost effective management over entire life cycle)*

**It's not all about Capital Costs!!!**

## **New opportunities to invest**

- **Reduce backlog**
- **New construction**

*\* One asset file may not be practical for your organization but if you have the opportunity it is worth considering.*





# Benefits



1. Better overall **agency performance**
2. Improved **customer service/customer experience**
3. **Lower operating & capital costs**
4. **Improved system reliability**
5. **Less inventory** (removal of obsolete parts, quicker identification of auction items)
6. Earlier identification of **procurement needs & burden**
7. **Less project discovery work / more accurate procurement documents**
8. **Reduced data entry - burden** (contractor s supply the agency with asset data)
9. **Reduced data duplication** (data storage and management)
10. **Better backlog management** (prioritized replacement/manage risk)
11. Improved **compliance** with local, state and federal requirements (**audit response**)
12. Better **environmental management** (system flags)
13. Better support of **transit industry initiatives**, particularly with **peer** agencies.
14. **Better positioned regionally** vs. other transportation providers
15. **Positive agency image**



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